

Figure 1

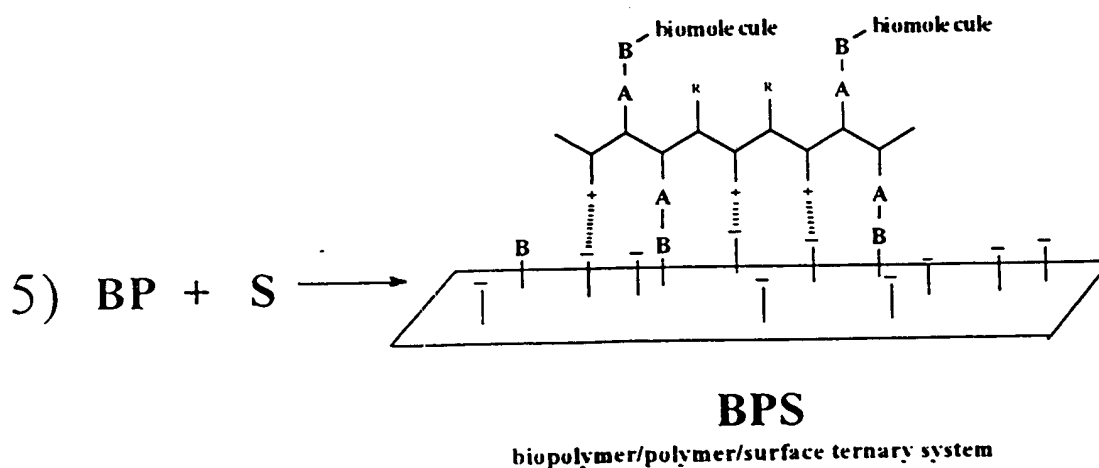
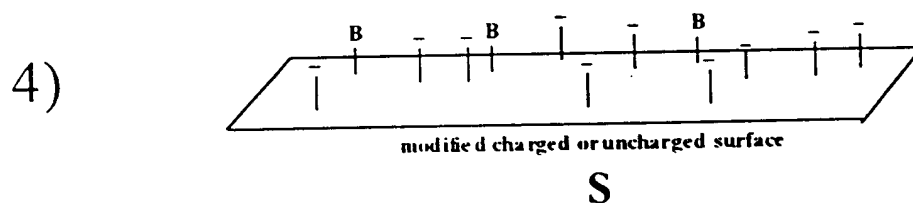
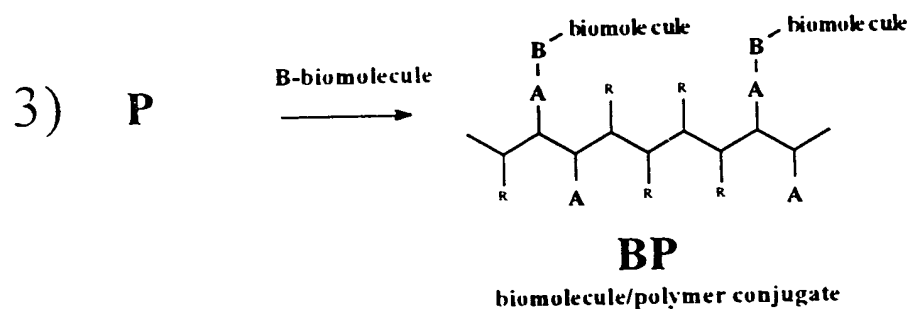
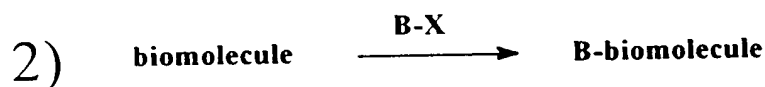
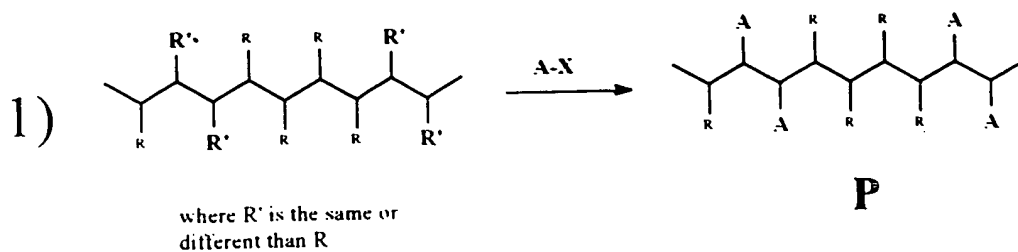
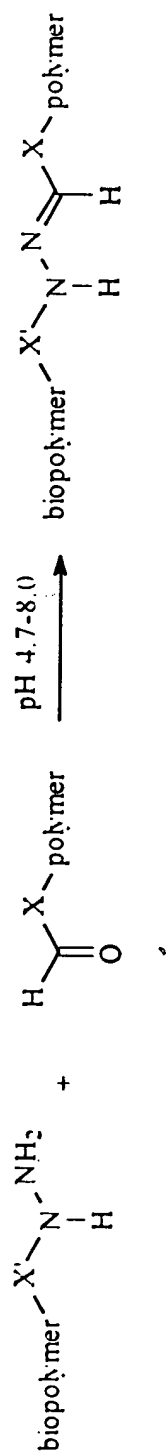
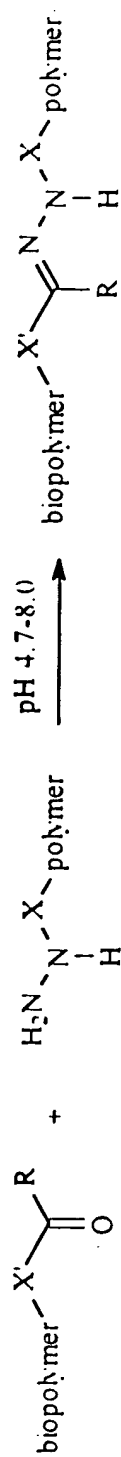


Figure 2



$\begin{array}{c} \text{R}-\text{N}-\text{NH}_2 \\   \\ \text{H} \end{array}$	$\begin{array}{c} \text{O} \\    \\ \text{R}-\text{N}-\text{C}-\text{N}-\text{NH}_2 \\   \quad   \\ \text{H} \quad \text{H} \end{array}$	$\begin{array}{c} \text{H} \quad \text{H} \\   \quad   \\ \text{R}-\text{N}-\text{N}-\text{C}-\text{N}-\text{NH}_2 \\   \quad    \\ \text{H} \quad \text{O} \end{array}$
<b>hydrazine</b>	<b>semicarbazide</b>	<b>carbazine</b>
$\begin{array}{c} \text{H} \\   \\ \text{R}-\text{C}-\text{N}-\text{NH}_2 \\    \\ \text{O} \end{array}$	$\begin{array}{c} \text{S} \\    \\ \text{R}-\text{N}-\text{C}-\text{N}-\text{NH}_2 \\   \quad   \\ \text{H} \quad \text{H} \end{array}$	$\begin{array}{c} \text{H} \quad \text{H} \\   \quad   \\ \text{R}-\text{N}-\text{N}-\text{C}-\text{N}-\text{NH}_2 \\   \quad    \\ \text{H} \quad \text{S} \end{array}$
<b>hydrazide</b>	<b>thiosemicarbazide</b>	<b>thiocarbazine</b>
$\begin{array}{c} \text{O} \quad \text{H} \quad \text{H} \\    \quad   \quad   \\ \text{R}-\text{N}-\text{C}-\text{N}-\text{N}-\text{C}-\text{N}-\text{NH}_2 \\   \quad   \quad    \\ \text{H} \quad \text{H} \quad \text{O} \end{array}$		
<b>carbonic acid dihydrazine</b>		
$\begin{array}{c} \text{O} \\    \\ \text{R}-\text{O}-\text{C}-\text{N}-\text{NH}_2 \\   \\ \text{H} \end{array}$		
<b>hydrazine carboxylate</b>		
$\begin{array}{c} \text{O} \\    \\ \text{R}-\text{C}-\text{R}' \end{array}$		
<p><b>R</b> = alkyl, aromatic or heteroatom</p> <p><b>R'</b> = H or straight, branched or aromatic or heteroatom</p>		
<b>carbonyl derivative</b>		

**R = alkyl, aromatic or heteroaromatic group**

**R' = H or straight, branched or cyclic alkyl moiety  
or aromatic or heteroaromatic moiety**

## carbonyl derivatives

Figure 4

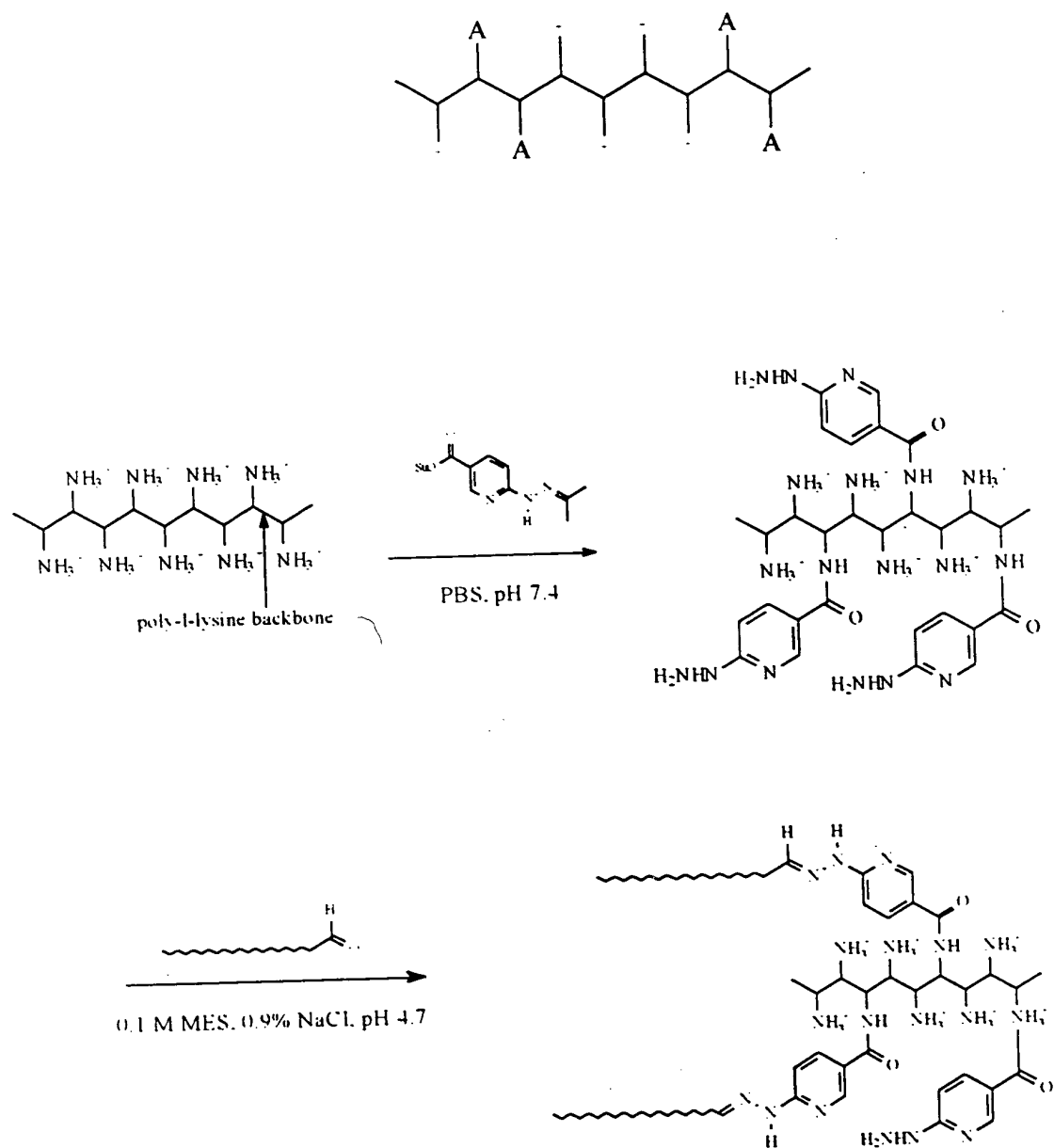


Figure 5

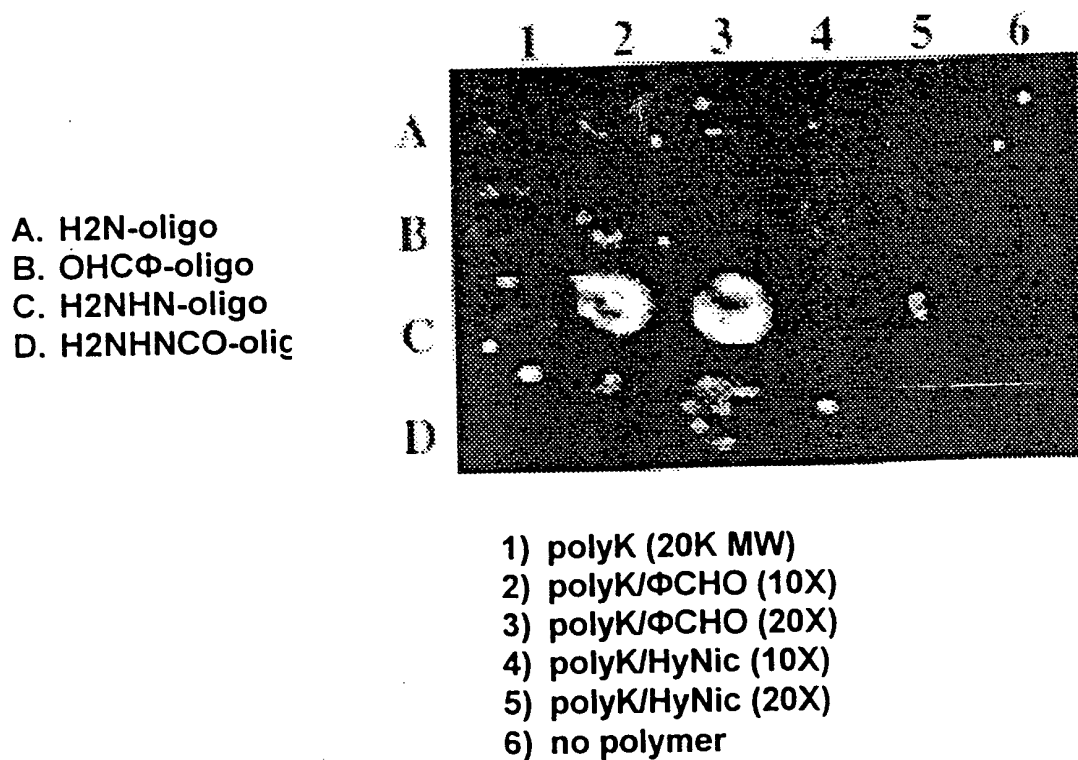
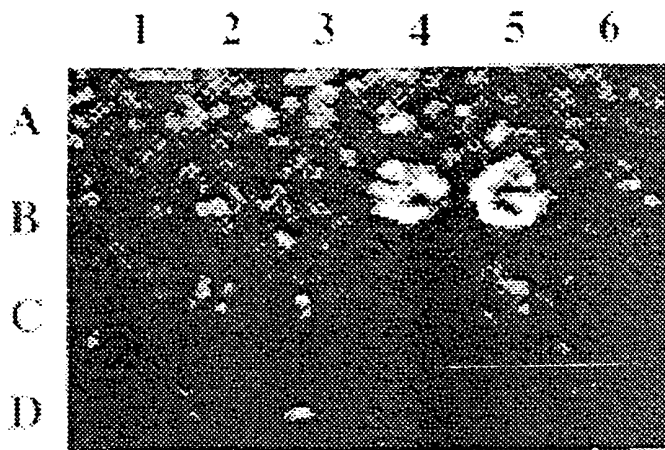


Figure X: Matrix experiment (see Example 2) demonstrating the covalent nature of the immobilization of a 5'-hydrazino oligo//sCHO/poly-L-lysine (polyK) conjugate on a amino modified glass slide following hybridization to its fluorescent complement.

Figure 6

- A. H<sub>2</sub>N-oligo  
 B. OHC-oligo  
 C. H<sub>2</sub>NHN-oligo  
 D. H<sub>2</sub>NHNCO-oligo



- 1) polyK (20K MW)  
 2) polyK/sCHO (10X)  
 3) polyK/sCHO (20X)  
 4) polyK/HyNic (10X)  
 5) polyK/HyNic (20X)  
 6) no polymer

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Figure 7

